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ABSTRACT

"Web" is identified with both the World Wide Web and the broader web of culture and fields of knowledge. The library is where all disciplines converge and is by its nature a force of order in the face of anarchical trends. Information literacy is the ability to both navigate and evaluate information. Like writing, information literacy is process-oriented and fundamental across the curriculum. "Connectivity and chaos" describes the way technology has created links as well as disorder. The context in which information literacy must be achieved is characterized by the rise of the Internet, proliferation of technologies, shifting demographics, and information overload. Information literacy programs should aim to demystify technology, incorporate collaborative/active learning techniques, pursue faculty involvement, and emphasize research as a process. Examples are cited from bibliographic instruction programs at St. Olaf College (Minnesota), the State University of New York, Montana State University, and the University of Washington. (Contains 17 references.) (MES)

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The Library at the Center of the Web: Information Literacy Across the Curriculum in an Age of Connectivity and Chaos

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Abstract

"Web" is identified with both the World Wide Web and the broader web of culture and fields of knowledge. The library is where all disciplines converge and is by its nature a force of order in the face of anarchical trends. Information Literacy is the ability to both navigate and evaluate. Like writing, information literacy is process-oriented and fundamental across the curriculum. "Connectivity and chaos" describes the way technology has created links as well as disorder. The context in which information literacy must be achieved is characterized by the rise of the Internet, proliferation of technologies, shifting demographics and information overload. Information literacy programs should aim to demystify technology, incorporate collaborative/active learning techniques, pursue faculty involvement and emphasize research as a process. Examples are cited from various academic BI programs.

1. Overview (Unpacking the Title of This Essay)

The *web* which appears in the title of this essay is a buzzword currently floating around in the zeitgeist -- on TV and radio, in newspapers and magazines. It is an abbreviation for that most rapidly evolving emanation of the Internet known as the *World Wide Web*. Every topic under the sun, every person, place, thing, idea or hobbyhorse under the sun either has its own "web site" or is planning on getting one soon. Aside from that unavoidable referent, the term "web" is used here in a broader metaphoric sense to suggest the web of culture and knowledge – which is undergoing gradual recapitulation on the Internet. In the academic world, this is the web of interrelated but increasingly specialized and disparate fields of knowledge.

It is in this academic context, specifically, that the library is the necessary center. The library -- whether we conceive of it as a real place or as a concept such as "the library without walls" -- is the unifying center where all the strands of knowledge connect. It is the center of gravity which holds the culture together in the face of centrifugal and anarchical forces -- forces

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which have always been with us but which have been supercharged in recent years by computer technology. "Turning and turning in the widening gyre, the falcon can't hear the falconer" --- in terms of that memorable image from Yeats, the library is the falconer who may have to resort to using a bullhorn to bring the falcon of knowledge back home to roost. Which is to say, the library needs to play its part in shaping and utilizing technology to make the center hold -- the same technology which, it could be argued, has been monopolized in recent times by the forces of anarchy.

Not that the anarchy is an evil trend necessarily. It is good to have things shaken up at times -- to shake loose the ossified, dead or unquestioned assumptions of our culture, and to open up spaces for renewal and creativity. The job of the library, however, is to hold those fundamental structures in place without which renewal cannot occur -- and to be a storehouse and point of convergence out of which new structures can creatively arise.

In this admittedly but unashamedly lofty view of the role of the library, the concept of information literacy encompasses what one might call the evangelical mission of the library -- to enable creativity and the renewal of knowledge. In academic libraries, Bibliographic Instruction (often abbreviated BI) is the traditional term for this process of educating and equipping library users. Information literacy, or BI, may be viewed as having two essential components, which may be thought of in terms of *navigation* and *evaluation*. The librarian straddles, especially in the current state of things, the world of the technician and the world of the scholar. In the first place, it is the task of the librarian to equip the library user with the technical skills necessary to navigate the maze of information sources, formats and structures. The librarian's further task, especially in an undergraduate environment, is to facilitate the critical thinking process in order to help the user evaluate what is encountered. Navigation and evaluation are recursive processes

which feedback on one another and lead the searcher forward toward episodes of clarity and serendipity.

Across the curriculum is a phrase most often associated with undergraduate writing programs. "Writing across the curriculum" has been a trend in post-secondary education to emphasize the fundamental need for good writing skills in every academic discipline. Facility with the written word is viewed as a *sine qua non* for thoughtfulness and creativity in approaching any cognitive task. Similarly, one could argue that research skills and information literacy are fundamental to every academic discipline. Writing and research are similar processes in that they lend themselves to feedback and revision and to the recursive patterns of thought itself. Furthermore, the library as I have already suggested, is at the crossroads of all academic paths and so it is natural to think of it as performing its mission across the breadth of the curriculum.

Finally, the title of this presentation claims that we find ourselves in an age of *connectivity and chaos*. That is the double-edged sword of information technology. Everything is becoming increasingly connected, accessible, searchable. But at the same time everything is becoming increasingly dispersed, disordered, overloaded, and out of control.

2. The Context for Information Literacy

A major venue for these developments is, of course, the Internet. Being a conglomeration of networks without a central brain or authority, the Internet lends itself to anarchy. It is like talk radio on a grand scale -- where every voice, however nutty or profound, has a forum. At the same time, though, it affords connections between people and breaks down barriers of geography and politics. It is a paradoxical, mutating, exponentially expanding environment which, like the

American West of a hundred years ago, is just beginning to emerge from its crude infancy. It is fickle and unpredictable, given to traffic jams and defunct links. And it is consuming and altering the culture out of which it sprang. For information professionals, it is both a problem and an opportunity.

Along with the rise of the Internet, there has been a more general rush of technology which has affected and at times afflicted the mission of the library. With the advent of microcomputer and CD-ROM technology, librarians have been confronted with a dizzying progression of interfaces and search languages -- while at the same time having to keep one foot planted in the old world of printed materials and indexes. Librarians have been faced with difficult decisions about embracing technologies and formats which seem to be out-of-date before they can be fully mastered. Oftentimes, moreover, the costliness of electronic resources is as much as ten times that of their print counterparts. What must be sacrificed to support such outlays? To paraphrase Kierkegaard, the librarian in relation to technology becomes a tragic-comic figure: tragic because the old age has passed away, comic because the new age has not yet taken shape.

Aside from, and in part due to, technological progress, there has also been a gradual shift in the demographics and culture of Academe, which affects the ways libraries function. Academic culture was once seen as an important crucible for the learning process. The campus was, and still is (but less so than in the past) viewed as a melting pot where diverse cultures and backgrounds would be drawn into the transcendent culture of academic knowledge and discipline. This view, however, is subject, even in small liberal arts institutions, to pressures of dispersion and dislocation. The celebration of diversity which has arisen in recent years, and which is undoubtedly a positive trend, has also resulted in the negative side-effects of tribalism,

separatism and reactionism. Also, academic culture has suffered an identity crisis regarding its core curriculum from which it may not soon recover. Along with these trends, technology has expanded the academic horizon by facilitating distance learning and computer conferencing among an increasingly scattered student body. Even at a traditionally cloistered liberal arts campus such as Linfield College in Western Oregon, distance learners now account for approximately one third of the total student population.[1]

Finally, we find ourselves, unlike ever before, in a situation characterized by information overload. The channels of mass media assault the urban denizen from every direction, and the suburban and rural landscapes are dotted with satellite dishes pulling in hundreds of separate signals which carry vying voices, glittering images, and fragmented bits of information day and night. Context gets lost in the flood. Befuddlement, apathy, and grunge rock are honest responses. Anxiety, mental paralysis and madness are distinct possibilities.

3. Facilitating Information Literacy

The foregoing was the apocalyptic portion of our show. What is the librarian, as educator and facilitator of information literacy, to do in these challenging and enervating times?

First, the librarian must have a firm enough grasp on the technology to help deflate and demystify it for the daunted student researcher. This applies as well to the unduly undaunted, overly-confident student researcher. In the former case, the student may be gripped by technophobia and uncertainty where to begin (this still occurs even among the Nintendo generation). In the latter case, the student may suffer from the false optimism that the first few items magically generated by the computer will do the job and that no further research is needed. In either case, providing instruction in the behind the scenes process and structure of electronic

data sources can provide valuable context for the researcher. Thus, one freshman bibliographic instruction program at St. Olaf College begins with a basic introduction to the MARC record structure, with an emphasis on how subject heading fields are created and defined behind the interface of the online catalog.[2] A BI program at the State University of New York incorporates an indexing activity which helps reveal the foibles of online index structure and the need for flexible and creative search strategies:

> We distribute a one-page article from a news magazine on a topic related to students' course work and instruct them to read through the article, circling terms that they think are important enough to use as index terms. Students are then divided into small groups, and each group is asked to select three to six terms from those they have circled individually. The groups report the terms they have chosen, and quickly see that their choices do not overlap completely (or even partially, sometimes) with those of other groups. We then show the class which terms were chosen by the professional indexer and discuss why they, too, may differ from the student-selected terms.[3]

The same program includes an illustration of Boolean logic whereby the class is divided up using the *and*, *or* and *not* operators.[4] In this way, the concepts of precision and recall in formulating a search strategy are made graphic and tangible apart from the trappings of a computer interface.

These last two examples also illustrate the use of collaborative and active teaching techniques in bibliographic instruction. The use of these kinds of creative methods, when executed well, can help overcome the sense of impending boredom and tedium students often associate with the library and the leg-work of research. Increasingly, the literature of bibliographic instruction speaks of incorporating pedagogical research on cognitive structures, learning styles, peer advising, journaling and experiential learning exercises into the library lesson plan. At Montana State University, for example, a series of single-shot, subject-oriented bibliographic instruction sessions was conducted based on the "jigsaw" concept of active learning.[5] The gist of the process is that separate groups of students are called upon to analyze

different types of information sources in an area related to specific course work. The separate groups subsequently reconvene in a large group session and discuss issues of coverage, currency, practical use and limitations of each information source. The upshot is that the group actively and collaboratively assembles a complete picture of the structure of information sources for a given discipline in which they have a vested, course-related interest.

This raises the issue of faculty involvement and the importance of creating a relevant context for information literacy. People learn best on a need-to-know basis, and for students the need to know is in large part dictated by the professor and the content of a particular course or research project. Unfortunately, as one recent survey has pointed out, faculty culture and library culture have often been at odds with one another when it comes to bibliographic instruction.[6] Given the current conditions of information overload and the proliferation of technology, however, librarians and faculty members -- as well as academic computing staff -- may have increased incentive to realize their interdependence. More than ever, they need each other – and the students need the help of all three if they are to be empowered to negotiate the chaos and exploit the connectivity of this new era.

One of the most impressive recent models of an interdependent computing-library-faculty information literacy collaboration is the University of Washington's UWired pilot program. In this program, sixty-five freshman were given laptops and a special classroom called a "Collaboratory" in which to plug into campus-wide and Internet online resources. Computing staff, librarians and faculty have worked together closely to develop the program, which includes a three-quarter seminar series focusing on information navigation and assessment, and culminates in a collaborative multimedia project. Comments from one of the librarians involved are revealing: "An important lesson from our experience thus far is that collaboration,

particularly between faculty and librarians, is central to the success of this program and to the continued enhancement of the educational experience of undergraduate students."[7]

The last and most important point for facilitating information literacy is to emphasize the reality that research is a process. As with the teacher of writing, the teacher of information skills can only hope to help the student overcome specific roadblocks, and provide basic tools and models of behavior for the student. With luck, the librarian can help to save the time of the student or the researcher. But ultimately the student -- and we are all lifelong students really -- must find his or her own way through the process of formulating and reformulating the research question. That is the reality that every program for information literacy must keep sight of -- that we are in the business of equipping each other for a lifelong quest. That quest may take us to the farthest reaches, but it will always bring us back to the library.

Notes

[1]Susan Barnes Whyte, "Spanning the Distance: Using Computer Conferencing as Part of a Team-Taught Research/Writing Class," *Reference Librarian* 51/52 (1995), 268.

[2]Bryn Geffert, "Beginning With MARC: Providing a Foundation for Electronic Searching," *Research Strategies* 13:1 (Winter 1995), 26-33.

[3]Trudi E. Jacobson and Beth L. Mark, "Teaching in the Information Age: Active Learning Techniques to Empower Students," *Research Librarian* 51/52 (1995), 112.

[4]Jacobson and Mark, 113.

[5]Patrick Ragains, "Four Variations on Drueke's Active Learning Paradigm," *Research Strategies*, 13:1 (Winter 1995), 40-50.

[6]Larry Hardesty, "Faculty Culture and Bibliographic Instruction: An Exploratory Analysis," *Library Trends* 44:2 (Fall 1995), 339-67.

[7]Anne Zald, "Librarians' Role in the UWired Collaboration," *Paideia* 3:2 (Winter 1995).